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Database: [All Databases \(USPT + EPAB + JPAB + DWPI + TDBD\)](#)

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114 and 13

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ALL	kd or dalton or da	73611	L10
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ALL	carrier or vector	947654	L8
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ALL	nucleic or dna or plasmid or vector	227481	L6
ALL	14 same 13	112	L5
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ALL	MW or molecular weight	468102	L2
ALL	polyethylenimine or PEI	5348	L1

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Entry 3 of 12

File: USPT

Jul 6, 1999

US-PAT-NO: 5919442

DOCUMENT-IDENTIFIER: US 5919442 A

TITLE: Hyper comb-branched polymer conjugates

DATE-ISSUED: July 6, 1999

US-CL-CURRENT: 424/78.18; 424/1.11, 424/1.33, 424/1.37, 424/178.1,
424/184.1, 424/193.1, 424/280.1, 424/405, 424/406, 424/422, 424/486,
424/487, 424/78.01, 424/78.19, 424/84, 424/85.1, 424/9.1, 424/DIG16,
435/455, 514/44, 514/772, 525/417, 525/539, 525/902

APPL-NO: 8/ 694787

DATE FILED: August 9, 1996

PARENT-CASE:

This application claims the benefit of U.S. Provisional application No.

60/002,202, filed Aug. 11, 1995, U.S. Provisional application No.

60/002,833, filed Aug. 25, 1995, U.S. Provisional application No.

60/003,105, filed Sep. 1, 1995, and U.S. Provisional application No.

60/004,108, filed Sep. 21, 1995.

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Document Number 4

Entry 4 of 12

File: USPT

Nov 3, 1998

US-PAT-NO: 5830730

DOCUMENT-IDENTIFIER: US 5830730 A

TITLE: Enhanced adenovirus-assisted transfection composition and method

DATE-ISSUED: November 3, 1998

US-CL-CURRENT: 435/455; 435/235.1, 435/465, 536/23.1

APPL-NO: 8/ 852934

DATE FILED: May 8, 1997

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Entry 6 of 12

File: USPT

Feb 3, 1998

US-PAT-NO: 5714166

DOCUMENT-IDENTIFIER: US 5714166 A

TITLE: Bioactive and/or targeted dendrimer conjugates

DATE-ISSUED: February 3, 1998

US-CL-CURRENT: 424/486, 424/1.29, 424/1.33, 424/1.37, 424/1.41, 424/1.49,
424/178.1, 424/193.1, 424/204.1, 424/234.1, 424/405, 424/417, 424/78.08,
424/9.3, 424/9.32, 424/9.322, 424/9.36, 424/9.4, 424/9.42, 424/9.6,
424/93.1, 424/DIG.16, 514/772, 523/105, 525/417

APPL-NO: 8/ 400203

DATE FILED: March 7, 1995

PARENT-CASE:

CROSS REFERENCE TO RELATED APPLICATIONS This application is a continuation-in-part of our applications Ser. No. 316,536, filed Sep. 30, 1994, now abandoned which is a continuation-in-part of our application Ser. No. 207,494, filed Mar. 7, 1994, now abandoned which is a divisional and continuation-in-part of application Ser. No. 043,198, filed Apr. 5, 1993, now U.S. Pat. No. 5,527,524, issued Jun. 18, 1996, which is a continuation-in-part of application Ser. No. 654,851, filed Feb. 13, 1991, now U.S. Pat. No. 5,338,532, issued Aug. 16, 1994, which is a continuation-in-part of application Ser. No. 386,049, filed Jul. 26, 1989, now abandoned, which is a continuation-in-part of application Ser. No. 087,266, filed Aug. 18, 1987, now abandoned, which is a continuation-in-part of application Ser. No. 897,455, filed Aug. 18, 1986, now abandoned. All of these prior application documents are hereby incorporated by reference in their entireties herein.

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Entry 7 of 12

File: USPT

May 20, 1997

US-PAT-NO: 5631329

DOCUMENT-IDENTIFIER: US 5631329 A

TITLE: Process for producing hyper-comb-branched polymers

DATE-ISSUED: May 20, 1997

US-CL-CURRENT: 525/417; 525/279, 525/280, 525/326.8, 525/902, 525/91

APPL-NO: 8/ 408833

DATE FILED: March 21, 1995

PARENT-CASE:

BACKGROUND OF THE INVENTION This application is a continuation-in-part application of copending application Ser. No. 08/376,100, filed on Jan. 20 1995, which is a continuation in part application of Ser. No. 08/004,849, filed on Jan. 19, 1993, now abandoned, which is a continuation-in-part of application Ser. No. 07/739,167 filed Aug. 1, 1991, now abandoned, which is a continuation-in-part of application Ser. No. 07/573,362, filed Aug. 27, 1990, now abandoned.

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Entry 11 of 12

File: JPAB

Jul 13, 1999

PUB-NO: JP411187874A

DOCUMENT-IDENTIFIER: JP 11187874 A

TITLE: BIOLOGICALLY ACCEPTABLE LOW-MOLECULAR WEIGHT POLYETHYLENEIMINE

PUBN-DATE: July 13, 1999

INVENTOR-INFORMATION:

NAME	COUNTRY
KISSEL, THOMAS	N/A
FISCHER, DAGMAR DR	N/A
ELSAESSER, HANS-PETER	N/A DR N/A
BIEBER, THORSTEN	

INT-CL (IPC): C12N 15/09; A61K 35/14; A61K 35/30; A61K 35/34; A61K 35/36;
A61K 35/407 ; A61K 47/48; A61K 48/00; C08G 73/04[Main Menu](#) [Search Form](#) [Result Set](#) [Show S Numbers](#) [Edit S Numbers](#)[First Hit](#)[Previous Document](#)[Next Document](#)[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KWIC](#)[Help](#)[Logout](#)

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Date	Reference	Claims	KWC		

Document Number 10

Entry 10 of 12

File: USPT

Feb 26, 1991

US-PAT-NO: 4996142

DOCUMENT-IDENTIFIER: US 4996142 A

TITLE: Non-radioactive nucleic acid hybridization probes

DATE-ISSUED: February 26, 1991

US-CL-CURRENT: 435/6; 521/31, 526/262, 530/358, 530/401, 536/24.3,
536/25.32, 548/113 , 548/181, 549/32, 549/50

APPL-NO: 7/ 094133

DATE FILED: September 4, 1987

FOREIGN-APPL-PRIORITY-DATA:

FOREIGN-PRIORITY-APPL-NO: GB 8621337

FOREIGN-PRIORITY-APPL-DATE: September 4, 1986

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Entry 2 of 3

File: DWPI

Jul 7, 1999

DERWENT-ACC-NO: 1999-231245

DERWENT-WEEK: 199945

COPYRIGHT 2000 DERWENT INFORMATION LTD

TITLE: Vector for nucleic acid transfection

INVENTOR: BIEBER, T; ELSASSER, H ; FISCHER, D ; KISSEL, T ; ELSAESSER, H

PRIORITY-DATA:

1997DE-1043135

September 30, 1997

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CN 1221796 A	July 7, 1999	N/A	000	C12N015/87
EP 905254 A2	March 31, 1999	G	012	C12N015/88
DE 19743135 A1	April 1, 1999	N/A	000	C12N015/79
CZ 9803105 A3	April 14, 1999	N/A	000	C12N015/87
AU 9887148 A	April 22, 1999	N/A	000	C08G073/04
HU 9802157 A2	June 28, 1999	N/A	000	C07H021/00
CA 2249058 A1	March 30, 1999	E	000	C12N015/87
JP 11187874 A	July 13, 1999	N/A	010	C12N015/09

INT-CL (IPC): A61K 31/70; A61K 31/785; A61K 35/12; A61K 35/14; A61K 35/30; A61K 35/34 ; A61K 35/36; A61K 35/407; A61K 47/34; A61K 47/48; A61K 48/00; C07C 251/08; C07H 21/00; C08G 73/02; C08G 73/04; C12N 5/10; C12N 15/09 ; C12N 15/63; C12N 15/64; C12N 15/79; C12N 15/85; C12N 15/87; C12N 15/88

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC
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Document Number 3

Entry 3 of 3

File: DWPI

Dec 15, 1999

DERWENT-ACC-NO: 1998-297478

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TITLE: Solid supports useful in immunoassays - comprise, e.g negatively charged polymer support with poly:ethylene:imine coating to eliminate non-specific adsorption of biological molecules

ABTX:

The following are claimed: (A) a solid support (SS) for an immunoassay, comprising: (a) a microplate comprising a negatively charged polymeric material (NCPM), and (b) a coating of polyethyleneimine (PEI) on the microplate; (B) a carrier for an immunoassay, comprising: (a) a SS; (b) a layer of microparticles (which are formed of a NCPM) on the SS, and (c) a coating of PEI on the microparticles; (C) solid phase immunoreagent for an immunoassay, comprising: (a) a microplate comprising a NCPM; (b) a coating of PEI on the microplate, and (c) an immunoreagent immobilised on the carrier by covalent coupling to the PEI; (D) a solid phase immunoreagent for an immunoassay, comprising: (a) a microplate comprising a carboxylate-modified latex; (b) a coating of PEI on the microparticles, and (c) an immunoreagent immobilised on the carrier by covalent coupling to the PEI; (E) SS for a high molecular weight kininogen (HMK) assay, comprising: (a) a microplate, and (b) a coating of a NCPM on the microplate; (F) a method for treating a NCPM surface to inhibit contact activation of plasma by the surface, comprising coating the surface with PEI; (G) an assay for HMK, comprising: (a) contacting a liquid sample (which is suspected of containing HMK) with a negatively charged SS, to immobilise HMK in the sample to the SS; (b) washing unbound material from the immobilised sample HMK; (c) contacting the immobilised sample HMK with a detector antibody (to which a detectable label is directly or indirectly bound) which binds HMK, and (d) assaying the binding of the detector antibody to the immobilised sample HMK, and (H) a kit for kininogen assays, comprising: (a) a first SS, comprising a negatively charged surface for capturing HMK; (b) a second SS, which has a coating of PEI, and which has a capture antibody (specific for low molecular weight kininogen (LMK)) immobilised on its surface by covalent coupling to the PEI coating, (c) a third SS, which has a coating of PEI, and which has a capture antibody (specific for kininogen heavy chain) immobilised on its surface by covalent coupling to the PEI coating, and (d) a supply of detector antibody which recognises both the heavy and light chain of HMK.

ABEQ:

The following are claimed: (A) a solid support (SS) for an immunoassay, comprising: (a) a microplate comprising a negatively charged polymeric material (NCPM), and (b) a coating of polyethyleneimine (PEI) on the microplate; (B) a carrier for an immunoassay, comprising: (a) a SS; (b) a layer of microparticles (which are formed of a NCPM) on the SS, and (c) a coating of PEI on the microparticles; (C) solid phase immunoreagent for an immunoassay, comprising: (a) a microplate comprising a NCPM; (b) a coating of PEI on the microplate, and (c) an immunoreagent immobilised on the carrier by covalent coupling to the PEI; (D) a solid phase immunoreagent for an immunoassay, comprising: (a)

a microplate comprising a carboxylate-modified latex; (b) a coating of PEI on the microparticles, and (c) an immunoreagent immobilised on the carrier by covalent coupling to the PEI; (E) SS for a high molecular weight kininogen (HMK) assay, comprising: (a) a microplate, and (b) a coating of a NCPM on the microplate; (F) a method for treating a NCPM surface to inhibit contact activation of plasma by the surface, comprising coating the surface with PEI; (G) an assay for HMK, comprising: (a) contacting a liquid sample (which is suspected of containing HMK) with a negatively charged SS, to immobilised HMK in the sample to the SS; (b) washing unbound material from the immobilised sample HMK; (c) contacting the immobilised sample HMK with a detector antibody (to which a detectable label is directly or indirectly bound) which binds HMK, and (d) assaying the binding of the detector antibody to the immobilised sample HMK, and (H) a kit for kininogen assays, comprising: (a) a first SS, comprising a negatively charged surface for capturing HMK; (b) a second SS, which has a coating of PEI, and which has a capture antibody (specific for low molecular weight kininogen (LMK)) immobilised on its surface by covalent coupling to the PEI coating, (c) a third SS, which has a coating of PEI, and which has a capture antibody (specific for kininogen heavy chain) immobilised on its surface by covalent coupling to the PEI coating, and (d) a supply of detector antibody which recognises both the heavy and light chain of HMK.

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Entry 2 of 26

File: USPT

Jan 11, 2000

DOCUMENT-IDENTIFIER: US 6013240 A

TITLE: Nucleic acid containing composition, preparation and uses of same

BSPR:

Preferred polymers for carrying out the present invention are those whose molecular weight is between 10.sup.3 and 5.times.10.sup.6. As an example, there may be mentioned polyethylenimine of average molecular weight 50,000 Da (PEI50K) or polyethylenimine of average molecular weight 800,000 Da (PEI800K).

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Entry 18 of 26

File: USPT

Jan 28, 1992

DOCUMENT-IDENTIFIER: US 5084350 A

TITLE: Method for encapsulating biologically active material including cells

CLPR:

4. The method according to claim 3, wherein said polymer is selected from the group consisting of: polylysine, polyethylenimine, polyarginine, and polymer containing quaternary ammonium groups, said polymer having an average molecular weight of about 15,000 to 35,000 daltons.

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Document Number 24

Entry 24 of 26

File: USPT

Oct 5, 1982

DOCUMENT-IDENTIFIER: US 4352883 A

TITLE: Encapsulation of biological material

DEPR:

The preferred method of forming the membrane, illustrated as step D in the drawing, is to permanently cross link surface layers of the droplets by subjecting them to an aqueous solution of a polymer containing groups reactive with functionalities in the gel molecules. Certain long chain quaternary ammonium salts may be used for this purpose in some circumstances. When acidic gums are used, polymers containing acid reactive groups such as polyethylenimine and polylysine may be used. In this situation, the polysaccharides are crosslinked by interaction between the carboxyl groups and the amine groups. Advantageously, permeability can be controlled by selecting the molecular weight of the crosslinking polymer used. For example, a solution of polymer having a low molecular weight, in a given time period, will penetrate further into the temporary capsules then will a high molecular weight polymer. The degree of penetration of the crosslinker has been correlated with the resulting permeability. In general, the higher the molecular weight and the less penetration, the larger the pore size. Broadly, polymers within the molecular weight range of 3,000 to 100,000 daltons or greater may be used, depending on the duration of the reaction, the concentration of the polymer solution, and the degree of permeability desired. One successful set of reaction conditions, using polylysine of average molecular weight of about 35,000 daltons, involved reaction for two minutes, with stirring, of a physiological saline solution containing 0.0167 percent polylysine. Optimal reaction conditions suitable for controlling permeability in a given system can readily be determined empirically without the exercise of invention.

CLPR:

5. The process of claim 4 wherein the polymer used for crosslinking is selected from the group consisting of polylysine and polyethylenimine, said polymer having an average molecular weight of about 35,000 daltons.

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Document Number 26

Entry 26 of 26

File: DWPI

Jan 4, 1999

DERWENT-ACC-NO: 1999-061586

DERWENT-WEEK: 199921

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TITLE: Complexes useful for transfection of cells or as tumour vaccines - comprise a nucleic acid and polyethyleneimine which is modified with a hydrophilic polymer, especially polyethylene glycol

INVENTOR: OGRIS, M; WAGNER, E ; BRUNNER, S ; KIRCHEIS, R

PATENT-ASSIGNEE: BOEHRINGER INGELHEIM INT GMBH[BOEH]

PRIORITY-DATA:

APPL-NO

1997DE-1026186

APPL-DATE

June 20, 1997

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
AU 9883385 A	January 4, 1999	N/A	000	C12N015/87
DE 19726186 A1	December 24, 1998	N/A	022	C07H021/04
WO 9859064 A1	December 30, 1998	G	000	C12N015/87

DESIGNATED-STATES: AU BG BR BY CA CN CZ EE HU IL JP KR KZ LT LV MX NO NZ
PL RO RU SG SI SK TR UA US UZ VN YU AT BE CH CY DE DK EA ES FI FR GB GR
IE IT LU MC NL PT SE

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	APPL-DESCRIPTOR
AU 9883385A	June 18, 1998	1998AU-0083385	N/A
AU 9883385A	N/A	WO 9859064	Based on
DE19726186A1	June 20, 1997	1997DE-1026186	N/A
WO 9859064A1	June 18, 1998	1998WO-EP03679	N/A

INT-CL (IPC): A61K 31/70; C07H 21/04; C07K 14/485; C07K 14/52; C07K 14/79; C08G 73/04 ; C08L 39/02; C12N 9/12; C12N 15/87

ABSTRACTED-PUB-NO: DE19726186A

BASIC-ABSTRACT:

A complex comprising a nucleic acid and polyethyleneimine (PEI) is new. The PEI is modified with a hydrophilic polymer which is covalently coupled to it.

Preferably the nucleic acid is DNA. The molar ratio of DNA to PEI, expressed as the molar ratio of nitrogen atoms in the PEI to phosphorus atoms in the DNA (the N/P value) is 2-100, especially 3-10. The PEI has a molecular weight of 700-2000000 (especially 2000-800000) Daltons. The

hydrophilic polymer is linear and is selected from polyethylene glycol (PEG), polyvinyl pyrrolidone, polyacrylamide, polyvinyl alcohol and copolymers of these. It is especially PEG. The molecular weight of the hydrophilic polymer is 500-20000 (especially 1000-10000) Daltons. The molar ratio of hydrophilic polymer to primary amino groups in the PEI is 1:10 to 10:1, especially 1:3-1. The PEI may be modified with a cellular ligand, especially transferrin. The PEI may be linked to the cellular ligand via the hydrophilic polymer.

USE - The complex may be used, e.g., for transfection of cells or as a tumour vaccine.

ADVANTAGE- The complexes may be prepared in concentrated form from dilute solutions, without formation of aggregates which could reduce the gene transfer efficiency.

ABSTRACTED-PUB-NO: DE19726186A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/10

DERWENT-CLASS: A14 A25 A96 B04 D16

CPI-CODES: A05-H03; A05-J11; A12-V01; B04-C03; B04-E01; B14-H01; B14-S11;
D05-H07; D05-H12; D05-H14;

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Document Number 2

Entry 2 of 11

File: USPT

Nov 12, 1996

DOCUMENT-IDENTIFIER: US 5574142 A

TITLE: Peptide linkers for improved oligonucleotide delivery

DEPR:

The cyanuric chloride activated ODN (CC-ODN3) is further reacted with polyethyleneimine (10,000 MW polyethyleneimine (PEI), in the example), as described in detail in EXAMPLE IX. The ODN-PEI conjugate which can be isolated presumably exists as a heterogeneous mixture of products with various ratios of ODN:PEI. The material balance (90% recovered ODN after purification in the example) implies that the average number of ODNs per polyamine is approximately 5. After formation of the ODN-polyamine conjugate, residual cationic charges on the PEI are preferably "capped" by treatment with succinic anhydride. This procedure prevents "non-specific adsorption" of non-target nucleic acids by the PEI. The "capping" reaction also serves as a model for introduction of "membrane recognition elements", as illustrated in FIG. 8. "Capping" of polyamine carrier molecules with succinic anhydride is an optional step that, in accordance with the invention, allows the "stickiness" of the ODN conjugates to be modulated. The net charge on the ODN-peptide-polyamine conjugates can also be controlled by varying the size of the polyamine.

DEPR:

Poly-L-lysine (PLL) is available as the hydrobromide salts from Sigma Chemical in a variety of average molecular weight ranges. The polymers are prepared by base-initiated polymerization of the corresponding N-carboxyanhydride. The MW range of most interest to this invention are 4K-15K, 15K-30K, and 30K-70K. A 10,000 MW polymer of PLL contains approximately 47 primary amines, and is much less densely charged than PEI. The naturally occurring poly-L-backbone can be degraded by lysosomal enzymes, but this carrier may pose toxicity problems. The "non-natural" poly-D-isomers are also commercially available and can be used as control compounds to study non-degradable carriers.

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Entry 5 of 14

File: USPT

Aug 31, 1999

US-PAT-NO: 5945100

DOCUMENT-IDENTIFIER: US 5945100 A

TITLE: Tumor delivery vehicles

DATE-ISSUED: August 31, 1999

US-CL-CURRENT: 424/93.21; 424/428, 424/488, 424/497, 424/78.01,
435/320.1, 435/325, 435/455

APPL-NO: 8/ 690535

DATE FILED: July 31, 1996

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Entry 7 of 14

File: USPT

Nov 3, 1998

DOCUMENT-IDENTIFIER: US 5830730 A

TITLE: Enhanced adenovirus-assisted transfection composition and method

BSPR:

The invention generally relates to the field of gene therapy and in particular to the transfection of eukaryotic cells assisted by complexes of adenovirus and certain cationic polymers.

BSPR:

Modern genetic engineering represents a powerful tool both for the fundamental study of molecular biology discussed above and for hopes of gene therapy to treat disease. However, the transfection of foreign genes into eukaryotic cells can still pose significant problems. Even though a range of techniques including calcium phosphate, electroporation, microinjection and osmotic shock have met with some success in vitro, none have proven suitable for in vivo applications. Further, certain types of cells have proven especially difficult to transfect. For example, pancreatic .beta.-cells have transfection efficiencies of only between 10 and 20% with electroporation under the optimal prior art protocols. This technique yields even poorer results in adult .beta.-cells and essentially does not work in intact islets. As such, molecular studies are restricted to dispersed fetal islets; the relatively low transfection efficiencies results in significant effort and cost for each study, and does not offer realistic opportunities for gene therapy.

DEPR:

Accordingly, suitable cationic polymers have groups comprising primary amines and secondary or tertiary amines. A preferred example of such cationic polymers are dendrimers such as those disclosed in U.S. Pat. Nos. 4,507,466, 4,558,120, 4,568,737, 4,587,329, 4,631,337, 4,694,064, 4,713,975, 4,737,550, 4,871,779, and 4,857,599 to Tomalia, D. A., et al. which are hereby incorporated by reference. Dendrimers have tertiary amines which have a pKa of 5.7. Improved results can be obtained by using fractured dendrimers which have been chemically or heat treated to remove some of the tertiary amines. Other suitable cations include polyethyleneimine (PEI) which has tertiary amines with a pKa of 5.9 and poly(4'-aza-4'-methylheptamethylene D-glucaramide) which has tertiary amines with a pKa of 6.0. Tests with PEI result in a two-fold improvement over dendrimers without any increase in cell toxicity. Suitable polymers may also have a molecular weight as low as 3000 MW.

ORPL:

Al Fasbender et al., "Complexes of Adenovirus with Polycationic Polymers and Cationic Lipids Increase the Efficiency of Gene Transfer in Vitro and in Vivo", The Journal of Biological Chemistry, vol. 272, No. 10, Issue of Mar. 7, 1997, pp. 6479-6489.

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Document Number 9

Entry 9 of 14

File: USPT

Feb 3, 1998

US-PAT-NO: 5714166

DOCUMENT-IDENTIFIER: US 5714166 A

TITLE: Bioactive and/or targeted dendrimer conjugates

DATE-ISSUED: February 3, 1998

US-CL-CURRENT: 424/486, 424/1.29, 424/1.33, 424/1.37, 424/1.41, 424/1.49,
424/178.1, 424/193.1, 424/204.1, 424/234.1, 424/405, 424/417, 424/78.08,
424/9.3, 424/9.32, 424/9.322, 424/9.36, 424/9.4, 424/9.42, 424/9.6,
424/93.1, 424/DIG.16, 514/772, 523/105, 525/417

APPL-NO: 8/ 400203

DATE FILED: March 7, 1995

PARENT-CASE:

CROSS REFERENCE TO RELATED APPLICATIONS This application is a continuation-in-part of our applications Ser. No. 316,536, filed Sep. 30, 1994, now abandoned which is a continuation-in-part of our application Ser. No. 207,494, filed Mar. 7, 1994, now abandoned which is a divisional and continuation-in-part of application Ser. No. 043,198, filed Apr. 5, 1993, now U.S. Pat. No. 5,527,524, issued Jun. 18, 1996, which is a continuation-in-part of application Ser. No. 654,851, filed Feb. 13, 1991, now U.S. Pat. No. 5,338,532, issued Aug. 16, 1994, which is a continuation-in-part of application Ser. No. 386,049, filed Jul. 26, 1989, now abandoned, which is a continuation-in-part of application Ser. No. 087,266, filed Aug. 18, 1987, now abandoned, which is a continuation-in-part of application Ser. No. 897,455, filed Aug. 18, 1986, now abandoned. All of these prior application documents are hereby incorporated by reference in their entireties herein.

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